

Amendments to the Drawings:

The attached sheet of drawing includes changes to Fig. 11. This sheet, which includes Fig. 11, replaces the original sheet including Fig. 11, which eliminates a portion of the hatching and corrects reference numerals.

Attachment: Replacement Sheet

REMARKS

The objection to claim 4 and the indication that such claim would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, is acknowledged. Applicants note that claim 4 has been retained in dependent form at this time and is considered to be allowable together with its parent claim in light of the amendments presented herein.

By the above amendment, informalities in the specification and drawings have been corrected. Independent claims 1, 10 and 17 have been amended to clarify features thereof with claim 2 being canceled and the dependent claims being amended to correspond to the language of the independent claims. Claims 11 and 12 have been amended to depend directly or indirectly from claim 10 and clarify features thereof, and claim 18 have been amended to recite that only directionality-adjusting antenna probes are provided. Claim 19, which is newly added, recites the feature of only the at least one grounded-electric-potential conductive flat plate is provided and claim 20 recites the feature that the antenna probes are loop antennas.

Turning to the Examiner's comments concerning the information disclosure statement filed 30 October 2003, applicants note that such paper is identified as "Information Under 37 CFR 1.56(a)" and was not submitted in accordance with 37 CFR 1.98(a)(1) as suggested by the Examiner. Furthermore, it is noted that the cited document is cited in the specification and applicants assume that the Examiner considered the document as described in the specification insofar as the duty of disclosure has been complied with.

With regard to the objection to the drawings and the objection to the specification concerning lack of reference numerals, or improper reference numerals, by the present amendment, the specification has been amended to utilize

appropriate reference numerals as well as to utilize the reference numerals referred to in the specification, as appropriate and Fig. 11 has been revised as shown in the attached replacement sheet to utilize the appropriate reference numerals as well as to clarify the structure as described in the specification. Accordingly, approval of the replacement sheet for Fig. 11 is requested and applicants submit that the objection to the specification and drawings should now be overcome.

As to the objection to claim 18, as noted above, claim 18, as amended, further limits the feature of claim 17 in reciting the feature of "only" directionality-adjusting antenna probe" and new claim 19 has been added which further defines claim 17 by reciting "only" the at least one grounded-electric-potential conductive flat plate.

With regard to the objection to claim 11 under 35 USC 112, second paragraph, by the present amendment, claim 11 has been amended to depend from claim 10, and where claim 10 now recites the feature of "at least one grounded-electric-potential conductive flat plate", claim 10 recites at least two of said grounded-electric-potential conductive flat-plates, and claim 12 has been amended to depend from claim 11. Thus, applicants submit that claim 11, as amended, should be considered to be in compliance with 35 USC 112, second paragraph.

As to the rejection of claims 1 - 3, 5, 7 - 12 and 14 - 18 under 35 USC 102(e) as being anticipated by US Patent No. 6,741,220 to Inoue, the rejection of claims 6 and 13 under 35 USC 103(a) as being unpatentable over US Patent No. 6,741,220 to Inoue in view of US Patent No. 5,940,048 to Martek, such rejections are traversed insofar as they are applicable to the present claims and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirement to support a rejection under 35 USC 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein

the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

With regard to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Turning first to claim 1, as amended, and the Examiner's contentions concerning the features of Inoue, applicants submit that contrary to the Examiner's contention, Inoue does not disclose claimed features as now recited in claim 1 or the other independent claims of this application. Looking to claim 1, claim 1 has been amended to more clearly set forth the features of the present invention as illustrated in Fig. 1 of the drawings of this application. That is, as now recited in claim 1, the narrow-directivity antenna probe includes a main antenna probe 101 and at least two directionality-adjusting antenna probes 102a and 102b, located in proximity to the main antenna probe in order to narrow the directionality of the main antenna probe, wherein the directionality-adjusting antenna probes (loop antennas 102a and 102b) are fed with opposite-phase electric currents (see the electric current directions

106a, 106b) with respect to the phase of the electric current fed to the main antenna probe (see the direction of electric current path 105 of main antenna probe 101, which is a loop antenna) and a phase difference between the main antenna probe and the directionality-adjusting antenna probes is in the range of $\pi \pm \pi/2$ [rad] (as described at page 8, lines 22 and 23, for example). It is noted that independent claim 17 has been amended to also recite the aforementioned features. Applicants note that as described in the paragraph at page 7, line 21 et. seq., with the aforementioned arrangement the resultant electric magnetic-field-intensity distribution can be focused in comparison with the case of the main probe 101 alone.

Turning to Inoue, irrespective of the Examiner's contention, this patent discloses, in the technical field of mobile communication using a circular polarization, a cross dipole antenna which improves an antenna gain and an axial ratio of the circular polarization in a low elevation angle. The configuration thereof is achieved by first and second dipole antennas 2a, 2b and 2c, 2d, which are not loop antennas, disposed so as to be approximately orthogonal at approximately $\lambda/4$ intervals on a reflecting plate 6 and by providing a plurality of non-feeding elements 3a - 3h, as described in the abstract and as illustrated in Figure 1 thereof. It is noted that the plurality of non-feeding elements are disposed around the first and second dipole antennas and is upraised from the reflecting plate. Irrespective of the Examiner's contentions, it is readily apparent that Inoue does not disclose a main antenna probe and at least two directionality-adjusting antenna probes located in proximity to the main antenna probe, noting that the dipole antennas of Inoue are disposed to be approximately orthogonal at approximately $\lambda/4$ intervals. Furthermore, there is no disclosure or teaching in Inoue that the directionality-adjusting antenna probes are fed with opposite-phase electric currents with respect to the phase of the electric

current fed to the main antenna probe, nor that a phase difference between the main antenna probe and the directionally-adjusting antenna probes is in a range of $\pi + \pi/2$ [rad], as recited in independent claims 1 and 17 and the dependent claims thereof. As such, applicants submit that claims 1 and 17 and the dependent claims thereof, as amended, patentable distinguish over Inoue with respect to the aforementioned features, and should be considered allowable thereover.

In this regard, while the Examiner refers to Inoue as teaching a main antenna probe 4a and an opposite-phased excited antenna probe 4c referring to column 11, lines 41 - 60, this portion of Inoue describes coaxial semi-rigid cables 4a, 4c which are connected to a phase delay circuit 7 so that an excitation signal is output to the coaxial semi-rigid cable 4a from the feeder unit 8 at 0° phase delay, and an excitation signal is output to the coaxial semi-rigid cable 4c from the feeder unit 8 at a 90° phase delay. This disclosure does not correspond to the claimed features of claims 1 and 17 and the dependent claims thereof, such that applicants submit all claims patentably distinguish over Inoue in the sense of 35 USC 102 or 103 and all claims should be considered allowable at this time.

As to the features of the dependent claims which depend from claims 1 and 17, applicants submit that the dependent claims recite further structural features, contrary to the position set forth by the Examiner which are not disclosed or taught by Inoue. For example, new dependent claim 20 recites the feature of loop antennas which are not disclosed or taught by Inoue.

With respect to claim 10, the Examiner contends that Inoue teaches a main antenna probe (4a) and a grounded-electric-potential conductive flat-plate (3a-3h) located in proximity to the main antenna probe in order to narrow the directionality of the main antenna probe referring to column 10, lines 46 - 49 of Inoue. Irrespective of

this position by the Examiner, applicants submit that as shown in Figures 10 and 11 of the drawings of this application, grounded-electric-potential conductive flat plates 104a and 104b, for example, are disposed in proximity to the main antenna probe 101. Although the Examiner contends that the plates 3a -3h of Inoue provide such structural features, applicants submit that Inoue at column 10, lines 12 - 33 describe the members 3a-3h as being non-feeding elements which are uprising approximately perpendicularly to the reflecting plate 6 and having insulation spacers 5a - 5h provided at the lower end thereof. Applicants submit that due to the specific disclosure of Inoue that the non-feeding elements 3a - 3h have insulation spacers 5a - 5h provided at the lower end thereof, which as shown in Fig. 2 extend from the reflecting plate 6, that such members 3a-3h do not represent grounded-electric-potential conductive flat-plates as recited in claim 10 and the dependent claims thereof. Further, member 4a is not a main antenna probe, as discussed above. Accordingly, applicants submit that claim 10 and the dependent claims also patentably distinguish over Inoue in the sense of 35 USC 102 with respect to the aforementioned features and should be considered allowable thereover.

As to the combination of Inoue and Martek, applicants submit that contrary to the Examiner's position, Inoue does not disclose the recited features of the independent claims in the sense of 35 USC 102 or 35 USC 103 and the citation of Martek for the utilization of a plurality of structures does not overcome the deficiencies of Inoue with respect to the recited features of the independent claims. Accordingly, applicants submit that this combination represents a hindsight reconstruction attempt which fails to provide the claimed features of the independent claims and therewith the dependent claims 6 and 13 in the sense of 35 USC 103.

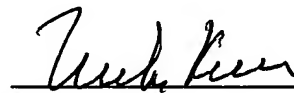
Thus, applicants submit that all claims patentably distinguish over this proposed combination of references and should be considered allowable thereover.

In view of the above amendments and remarks, and the submission of replacement sheet for Fig. 11, applicants submit that the informalities noted by the Examiner have been overcome and that all claims patentably distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 500.43242X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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